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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
SMITH, TYRONE W	

ART UNIT	PAPER NUMBER
2837	

DATE MAILED: 06/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/789,314	MEHLHORN ET AL.	
	Examiner	Art Unit	
	Tyrone W. Smith	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-11,13,14 and 17-20 is/are rejected.

7)☒ Claim(s) 12,15 and 16 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on ***. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner is considering the information disclosure statement.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 5, 6 and 17 recites the limitation "...detecting an existence of the operational power, detecting an absence of the operational power, and a combination thereof" in claims 5, 6 and 17. There is insufficient antecedent basis for this limitation in the claims, which includes a combination thereof.

Claim 7 dependent on claims 6 is also rejected based on 35 U.S.C. 112 second paragraph.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3, 9, and 10 rejected under 35 U.S.C. 102(b) as being anticipated by Shapess (5514943).

Regarding Claim 1. Shapess discloses a multispeed motor control system (stator, shaft and rotor refer to the background of the invention), which includes a first speed circuit (Figures 1 and 2 item 25) comprising a first main winding (Figures 1 and 2 item 50), an auxiliary winding (Figures 1 and 2 item 55) and a switch (Figures 1 and 2 items 35 and 65) connected in series with the auxiliary winding, and a second speed circuit (Figures 1 and 2 item 30) comprising a second main winding (Figures 1 and 2 item 90); providing an operational power to one of the first speed circuit and the second speed circuit (Figures 1 and 2 item 15); and controlling the switch (Figures 1 and 2 items 35 and 65) to limit current through the auxiliary winding based at least in part on the provision of the operational power to the second speed circuit (column 3 lines 53-67 and column 4 lines 1-13).

Regarding Claim 2. Shapess discloses controlling the switch (Figures 1 and 2 items 35 and 65) to limit current through the auxiliary winding based at least in part on the provision of the operational power to the second speed circuit (column 3 lines 53-67 and column 4 lines 1-13).

Regarding Claim 3. Shapess discloses an auxiliary circuit (Figures 1 and 2 item 80), wherein the auxiliary circuit comprises the auxiliary winding (Figures 1 and 2 item 55) and a capacitor (Figures and 1 and 2 item 60) connected in series with the auxiliary winding, wherein controlling the switch (Figures 1 and 2 items 35 and 65) to limit current through the auxiliary winding comprises controlling the switch (Figures 1 and 2 items 35 and 65) to limit current through the auxiliary winding and the capacitor based at least in part on the provision of the operational power to the second speed circuit.

Regarding Claim 9. Shapess discloses a multispeed motor control system (stator, shaft and rotor refer to the background of the invention); a first speed circuit (Figure 2 item 50) comprising a first main circuit, a first auxiliary circuit, and a switch connected in series with the first auxiliary circuit, the first speed circuit being configured to cause the rotor and shaft to rotate at a first speed when an operational power is provided to the first speed circuit; a second speed circuit (Figure 2 item 30) comprising a second main circuit and a second auxiliary circuit, the second speed circuit being configured to cause the rotor and shaft to rotate at a second speed when an operational power is provided to the second speed circuit; and a controller (Figure 2 item 15) configured to control operation of the switch based at least in part on whether an operational power is provided to the first speed circuit or the second speed circuit, the controller controlling the switch to limit current through the switch when the second speed circuit receives the operational power (column 3 lines 53-67 and column 4 lines 1-13).

Regarding Claim 10. Shapess discloses the first speed circuit is of a permanent split capacitor design, and wherein the second speed circuit is of a permanent split capacitor design (Figures 1 and 2).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 4 and 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Shapess (5514943) in view of Phillips (4453118).

Regarding Claims 4 and 5. Shapess discloses a multispeed motor control system (stator, shaft and rotor refer to the background of the invention), which includes a first speed circuit (Figures 1 and 2 item 25) comprising a first main winding (Figures 1 and 2 item 50), an auxiliary winding (Figures 1 and 2 item 55) and a switch (Figures 1 and 2 items 35 and 65) connected in series with the auxiliary winding, and a second speed circuit (Figures 1 and 2 item 30) comprising a second main winding (Figures 1 and 2 item 90); providing an operational power to one of the first speed circuit and the second speed circuit (Figures 1 and 2 item 15); and controlling the switch (Figures 1 and 2 items 35 and 65) to limit current through the auxiliary winding based at least in part on the provision of the operational. However, Shapess does not disclose detecting which of the first and/or second speed circuits receives operational power or absence of the power.

Phillips discloses a starting control circuit for a multispeed AC motor detecting which of the first and second speed circuits (Figure 1 items 22-25) receives operational power or absence of the power. The speed selector sensing means (Figure 1 item 32) senses the position of the speed selector switch (Figure 1 item 28). The speed circuits receive power from the AC source (Figure 1 item 30), therefor the speed selector sensing means (Figure 1 item 32), which sense the position of the speed selector switch (Figure 1 item 28), would sense not only the position but also sense which circuit is receiving or absence of operational power.

It would have been obvious to one of ordinary skill in the art at the time of invention to use Phillips starting control circuit for a multispeed AC motor with Shapess multispeed motor control system. The advantage of combining the two would provide a starting control circuit for an alternating current motor that utilizes relatively little electrical power.

8. Claims 8, 11, 13 and 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Shapess (5514943) in view of Woodward (5883488).

Shapess discloses a multispeed motor control system (stator, shaft and rotor refer to the background of the invention), which includes a first speed circuit (Figures 1 and 2 item 25) comprising a first main winding (Figures 1 and 2 item 50), an auxiliary winding (Figures 1 and 2 item 55) and a switch (Figures 1 and 2 items 35 and 65) connected in series with the auxiliary winding, and a second speed circuit (Figures 1 and 2 item 30) comprising a second main winding (Figures 1 and 2 item 90); providing an operational power to one of the first speed circuit and the second speed circuit (Figures 1 and 2 item 15); and controlling the switch (Figures 1 and 2 items 35 and 65) to limit current through the auxiliary winding based at least in part on the provision of the operational. However, Shapess does not disclose a switch comprises a solid-state switch, and wherein the controller utilizes gating pulses to control operation of the solid-state switch; and a current sensor, and wherein controlling operation of the switch based at least in part on whether an operational power is provided to the first speed circuit or the second speed circuit is based at least in part on an output of the current sensor.

Regarding Claims 8, 13 and 14. Woodward discloses an apparatus for multispeed hybrid start switch for a motor, which includes a solid-state switch (Figure 1 item Q1), and wherein the controller (Figure 1 item 18) utilizes gating pulses to control operation of the solid-state switch.

It would have been obvious to one of ordinary skill in the art at the time of invention to use Woodward's an apparatus for multispeed hybrid start switch for a motor with Shapess multispeed motor control system. The advantage of combining the two would provide a switching device for a dual speed motor that can accommodate a large number of starts at a first speed with high reliability and that can accommodate a lesser number of starts at a speed.

Regarding Claim 11. Woodward discloses an apparatus for multispeed hybrid start switch for a motor which includes a current sensor (Figure R1), and wherein controlling operation of the switch (Figure 1 item Q1) based at least in part on whether an operational power is provided to the speed circuits is based at least in part on an output of the current sensor. Note that the switches S1-S5 connected to the windings open and/or close provide different circuit configurations. Refer to column 6 lines 36-62.

It would have been obvious to one of ordinary skill in the art at the time of invention to use Woodward's an apparatus for multispeed hybrid start switch for a motor with Shapess multispeed motor control system. The advantage of combining the two would provide a switch that does not unnecessarily and undesirably increase the current requirement of the motor as it comes up to speed.

9. Claims 18-20 rejected under 35 U.S.C. 103(a) as being unpatentable over Shapess (5514943) in view of Woodward (5883488).

Regarding Claims 18 and 20. Shapess discloses a multispeed motor control system (stator, shaft and rotor refer to the background of the invention); a first speed circuit (Figure 2 item 50) comprising a first main circuit, a first auxiliary circuit, and a switch connected in series with the first auxiliary circuit, the first speed circuit being configured to cause the rotor and shaft to rotate at a first speed when an operational power is provided to the first speed circuit; a second speed circuit (Figure 2 item 30) comprising a second main circuit and a second auxiliary circuit, the second speed circuit being configured to cause the rotor and shaft to rotate at a second speed when an operational power is provided to the second speed circuit; and a controller (Figure 2 item 15) configured to control operation of the switch based at least in part on whether an operational power is provided to the first speed circuit or the second speed

circuit, the controller controlling the switch to limit current through the switch when the second speed circuit receives the operational power (column 3 lines 53-67 and column 4 lines 1-13). However, Shapess does not disclose a switch being a solid-state switch connected to the auxiliary winding, and wherein the controller utilizes gating pulses to control operation of the solid-state switch.

Woodward discloses an apparatus for multispeed hybrid start switch for a motor, which includes a solid-state switch (Figure 1 item Q1), and wherein the controller (Figure 1 item 18) utilizes gating pulses to control operation of the solid-state switch.

It would have been obvious to one of ordinary skill in the art at the time of invention to use Woodward's an apparatus for multispeed hybrid start switch for a motor with Shapess multispeed motor control system. The advantage of combining the two would provide a switching device for a dual speed motor that can accommodate a large number of starts at a first speed with high reliability and that can accommodate a lesser number of starts at a speed.

Regarding Claim 19. Woodward discloses an apparatus for multispeed hybrid start switch for a motor which includes a current sensor (Figure R1), and wherein controlling operation of the switch (Figure 1 item Q1) based at least in part on whether an operational power is provided to the speed circuits is based at least in part on an output of the current sensor. Note that the switches S1-S5 connected to the windings open and/or close provide different circuit configurations. Refer to column 6 lines 36-62.

It would have been obvious to one of ordinary skill in the art at the time of invention to use Woodward's an apparatus for multispeed hybrid start switch for a motor with Shapess multispeed motor control system. The advantage of combining the two would provide a switching device for a dual speed motor that can accommodate a large number of starts at a first speed with high reliability and that can accommodate a lesser number of starts at a speed.

Allowable Subject Matter

10. Claims 6 and 17 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Claims 12, 15 and 16 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Prior art related to the current invention is disclosed in the PTO-892.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tyrone W. Smith whose telephone number is 571-272-2075. The examiner can normally be reached on weekdays from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin, can be reached on 571-272-2800 ext. 37. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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PRIMARY EXAMINER